

Measuring Matter Activity

Learning Objective: Students will be able to, orally and in writing:

- Identify how scientists measure matter
- Explain why an object floats or sinks
- Describe properties of matter

STATION 1: MEASUREMENT

Directions: Use textbook pages 166-167, and the glossary at the back of your textbook, to:

- identify each type of measurement at Stations A-C in the classroom
- name the tool used to make the measurement
- find the measurement of the object at each station

Write your answers in the table. Don't forget the units for the measurement of each object!

Station	Type of Measurement	Tool	Measurement Amount
A			
B			
C			

STATION 2: BUOYANCY

Directions: Choose three objects from the box at this station. For each object:

1. *FIRST*, **PREDICT** if it will sink or float
2. *NEXT*, **WRITE** your prediction in the table
3. *THEN*, put each object in water to **TEST** your prediction
4. *FINALLY*, **WRITE** your answer in the table

Then answer the questions that follow!

Object	Prediction (sink or float)	Results (sink or float)
1.		
2.		
3.		

Use the **glossary** at the back of your textbook to find the definitions for:

1. *Buoyant force*: _____

2. *Gravity*: _____

Read **the paragraph at the bottom of page 168** in your textbook to answer questions 3 and 4.

3. What causes an object to **sink**?
4. What causes an object to **float**?

STATION 3: DENSITY

Directions: Use page 169 in your textbook to provide a definition for density, and the formula to calculate density. Calculate the density of each cube using the formula for volume (**length × width × height**), and the mass using a digital scale. Show your work and write your answers in the table. Then, answer the questions that follow.

1. Define *density*: _____

2. Density formula:

Cube	Volume (cm ³)	Mass (g)	Density (g/cm ³)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

1. Which measurement was the **SAME** for all of the cubes?

2. Which measurements were **DIFFERENT** for all of the cubes?

3. Why does each cube have a different density?